

## CLAIMS

What is claimed is:

*DRAFT*

1. A method for increasing control information from a single general purpose input/output (GPIO) mechanism, the method comprising:
  1. utilizing a single GPIO mechanism with a socket on a computer system; and
  2. determining whether a first card, a second card, or no card is installed in the socket according to detected changes in signal states on a single signal line between the GPIO mechanism and the socket.
2. The method of claim 1 wherein determining further comprises writing a signal in a first state by a POST (power-on self test) routine to the GPIO mechanism.
3. The method of claim 2 wherein determining further comprises reading a state of the GPIO mechanism by the POST routine.
4. The method of claim 3 wherein determining further comprises writing the signal in a second state by the POST routine to the GPIO mechanism.
5. The method of claim 4 further comprising reading a state of the GPIO mechanism by the POST routine.
6. The method of claim 5 wherein when the state of the GPIO mechanism changes in accordance with state changes by the POST routine, no card is installed in the socket.
7. The method of claim 6 wherein when the state of the GPIO mechanism does not change, one of the first and second cards is installed.

15A/15B

2 8. The method of claim 7 wherein one of the first and second cards pulls-up the signal line, and the other of the first and second cards pulls-down the single signal line.

1 9. The method of claim 1 wherein the first and second cards comprise first and second

2 POV cards.

1 10. A system for increasing control information from a single general purpose

2 input/output (GPIO) mechanism, the system comprising:

3 a computer system planar including a socket; and

4 a GPIO means coupled to the socket via a single signal line, wherein at least three states of

1 occupancy of the socket is detected according to state changes on the single signal line.

1 11. The system of claim 10 wherein when a first card occupies the socket, the single

2 signal line is pulled to a first logic state.

1 12. The system of claim 11 wherein when a second card occupies the socket, the single

2 signal line is pulled to a second logic state.

1 13. The system of claim 12 wherein when no card occupies the socket, the single signal

2 line changes state in response to state changes of a signal from a POST (power-on self test)

3 routine.

1 14. The system of claim 13 further comprising a controller coupled to the GPIO to

2 perform the POST routine.

1 15. The system of claim 14 further comprising a transient storage circuit coupled to the

2 single signal line to assist in the detection of state changes.

1 16. The system of claim 15 wherein the transient storage circuit comprises a resistor-

2 capacitor (R-C) circuit.

*Patent*

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3 7. A method to allow trinary state determination from a single signal line, the method  
4 comprising:  
5 providing a GPIO (general purpose input/output) mechanism for a socket on a computer  
6 system planar; and  
7 utilizing a transient storage circuit on a signal line between the GPIO mechanism and the  
8 socket to allow detection of at least three separate conditions of the socket.

1 18. The method of claim 17 wherein utilizing a transient storage circuit further comprises utilizing  
2 an R-C (resistor-capacitor) circuit.

1 19. The method of claim 18 wherein utilizing an R-C circuit further comprises detecting a first  
2 state on the signal line indicating presence of a first card in the socket, detecting a second state on  
3 the signal line indicating presence of a second card in the socket, and detecting a state change on  
4 the signal line indicating no card presence in the socket.

1 20. The method of claim 19 wherein detecting the first state, the second state, and the state  
2 change further comprises detecting whether state of the signal line changes in response to signals  
3 sent by a POST (power-on self test) routine to the GPIO mechanism.

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